

NON-MOISTUREPROOF CELLOPHANE AND CELLULOSE ACETATE
FILM FOR PRESERVING HERBARIUM SPECIMENS

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In connection with research on induced mutations it was necessary to preserve herbarium specimens of controls and induced mutations, particularly of the delicate floral parts of various plant species, so that general comparisons and approximate length and width measurements could be made at later convenient times. This problem was solved by the use of a simple method involving the mounting of the parts between non-moistureproof cellophane (Du Pont 300 PT) or cellulose acetate (Du Pont 100 CA) film, and rapid drying for a short time.

In the preservation of floral parts, for instance, the flower is split longitudinally (cut in longisection), and the parts are placed side by side between two sheets of the film; or petals, stamens, and other parts are excised and mounted in the same way. The preparation is then placed in an ordinary plant press, between blotters and corrugated aluminum dividers, for drying in a forced draft drying oven at 60° to 65° C. for a few hours. The press is placed in the oven with the corrugations of the dividers parallel with the direction of the air current. This rapid drying prevents cloudiness in the preparation and is usually sufficient to dry the delicate parts.

Further drying of the preparation, if required, may be carried out in the usual manner, or the press may be placed in a drying box with electric light bulbs as a heat source (New York Biological Supply Co. unit) in order to obviate brittleness in the dried larger plant parts (Archer, 1945). Before being placed in the press, larger, fleshy plant parts should be heat-killed by placing them in the forced-draft oven for a minimum period, and after being placed between the sheets of film in the press, they should be left in the oven until any exuded moisture, which may be considerable, has evaporated. If necessary, after the plant parts are dry, the edges of the two sheets of film may be heat-fused in a few places to prevent separation. Finally, one end of the preparation is stapled to the left or right side or top of the herbarium sheet so that the under side may be viewed by turning over the preparation like a leaf in a book.

Preparations made by this method are subject to minimum shrinkage and as a rule the color of the plant parts is nearer the original than when the preparations are made by the conventional method.

The method, briefly outlined, has general application in herbarium technic. Floral parts from dried specimens restored by soaking (maceration) may also be permanently mounted between sheets of film, dried, and stapled to the herbarium sheet, as indicated, for convenient inspection.

No attempt has been made in this brief note to touch on the various factors that must be considered in adapting this technic to general herbarium practice, and this is left to those interested. Apparently its main value will be in preserving the delicate floral parts and in mounting leaves or parts of leaves so that the upper and under sides may be easily viewed in the same specimens. Whether the non-moisture-proof cellophane or the cellulose acetate film will prove more lasting still has to be determined. The former gives somewhat quicker drying than the latter which is important when working with larger fleshy parts. Nylon and other newer plastic films will also be tested for the purpose indicated. In this connection it is of interest to note that according to Minoque (1943), "Cellulose acetate, cellulose acetate-propionate, cellulose acetate-butyrate, and nylon films are all suitable" for use in the repair and preservation of records, and "materials similar in appearance but different in composition, such as cellophane, cellulose nitrate, ethyl cellulose, and the vinylite resins, should not be used in records treatment as they are either not sufficiently plastic or not permanent."

LITERATURE CITED

- Archer, W. Andrew. Collecting Data and Specimens for Study of Economic Plants. U. S. Dept. Agric. Misc. Publ. 568. 1945.
- Minoque, Adelaide E. The Repair and Preservation of Records. U. S. Nat. Arch. Bull. 5. 1943.